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CONTINUOUS SYSTEM OF MINING UNSUITABLE FOR MANY DONBASS MINES

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Long use of the continuous system of mining in nearly all mines of the Donbass, without taking into consideration seam stratification conditions, indicates that defects inherent in the system detract from its merits to a considerable extent. These defects have recently become particularly evident with the introduction of new techniques and the cycle work schedule. When heavy mining machinery was first introduced, the continuous system of mining did play an important part in the quick development of the mining front and in the increase of the coal output of Donbass mines. However, in many cases, it now acts as a brake on the effective exploitation of new machines and the increase of labor productivity in exploitation.

The most serious defect in the continuous system is the advancing method of working sections and mine fields, since by this method, passages are necessarily located in the worked-out area. This brings about the following results: poor condition of development workings, combined with very high cost in maintaining them; difficult operating conditions for underground transport because of the unsatisfactory condition of haulage passages; ill-timed and laborious delivery of timber to the mine face, from below to above; considerable leakages of air through the worked-out area and poor ventilation of the faces; wide dispersion of mining operations and, in this connection, a long stretch of workings to be maintained.

Another great defect in the continuous system of mining is the absence of preliminary development of the line of the face, as a result of which work on cutting haulage passages and on direct removal of the deposit is combined in one exploitation section. This turns the loading point at the face into a bottleneck in the work of the section, since it is a concentration point for loading coal from the face, unloading mine timbers and delivering them to the face, delivering empty cars to the face, and hauling coal and rock from the face. The passage is blocked up by the location of the ventilator, ventilating ducts,

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starting apparatus, and necessary supplies of timber, all in the passage near the face. All this complicates arrangements for the arrival of empty cars beneath the face and at the development front, and results in idleness of machines at the face.

In Donbass mines, there are instances where the condition of the workings has been improved and the costs of maintaining them have been lowered, in spite of the fact that the continuous method was used. However, these are few in number and, besides, the cost reduction in maintaining workings is so insignificant that it would be absolutely wrong to conclude, on this basis, that the problem of propping passages in the continuous system of mining is solved. Experience in the Donbass shows that, up to the present, no prevailing type of prop exists which can assure the stability of passages without the installation of extra props in the irregular pressure zone of the wall rock. Such a method of propping still remains a problem.

It is necessary to assure the stability of the haulage and ventilation passages first of all by using systems of working the deposit and of developing sections and mine fields which will exclude the need of maintenance of workings in the irregular pressure zone of the wall rock, and will also permit a considerable decrease in the amount of workings maintained and in the dispersion of exploitation sections. In this case, existing types of metal props and reinforced-concrete props can assure long stability of passages without extra props in the irregular pressure zone. This is impossible to achieve by using the continuous method.

Universal use of the continuous method of mining is certainly wrong. In the Donbass, it is expedient to use both the continuous method and the long pillar method, that is, both advancing and retreat mining, taking into consideration, in choosing the system, not only the thickness of the seam but also the behavior of the wall rock of the given seam.

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